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#### **E-LINE FLD**

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#### **DVERVIEW**

Aesthetic, safe, practical and flexible structure eliminating cable mess. E-LINE FL Indoor Busbar Trunking Systems

FL Busbar system allows easy and safe power distribution in workplaces

- Offices
- Workshops
- Stores
- Grocery stores
- Hospitals
- Laboratories
- Airports
- Business Centers

Wherever power is needed without the need for additional cabling.

#### Eliminates trailing cables and fixed sockets for low power distribution.

E-LINE FL Indoor Busbar Trunking Systems can be mounted on any structure or surface using brackets. They can be used separately for power or UPS sockets requirements when needed. Private power and UPS sockets with aesthetic design and different color options can be installed with out any hand tools to desired point.





#### GENERAL SPECIFICATION

▶Mains or UPS Sockets; 16A, 250V (child protected)
▶FL Busbar; 32A, 250V Operating voltage

▶IP2X Protection Class

▶Use of sockets in different colours for mains or UPS circuits

▶ Single phase circuit (3 conductors); L+N+(PE) (65x28 mm)

►Aesthetic, safe, practical and flexible structure

- ►Easy and fast mounting
- Standard length is 1m and 2m.

Standard color is white (RAL 9003), for different color and cover alternatives, please contact with us.





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#### FL BUSBAR DESIGN and PRODUCT SELECTION

For design and product selection, select the numbered products and accessories shown below according to the layout of the building as shown in the project example.

Note: Please consider the voltage drop and current rating by checking the length of the busbar and the number of sockets proposed.

2

#### FL-I Single phase circuit (3 conductors L/N/PE):

1- FL Busbar Feeder Unit; 32A, 250V,

- 2- FL Busbar; 32A, 250V,
- 3- FL Busbar Internal Corner Unit; 32A, 250V,
- 4- FL Busbar Joint Set; 32A, 250V,
- 5- FL Busbar External Corner Unit; 32A, 250V,
- 6- FL Power/UPS Socket; 16A, 250V (child protected), (\*)
- 7- FL Busbar End Cap; 32A, 250V,
- 8- FL Busbar Mounting Bracket Set
  - : For **FL-I** : **L/N/PE**
- (\*) : Either power socket or UPS socket can be used with FL-I

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#### TECHNICAL SPECIFICATIONS

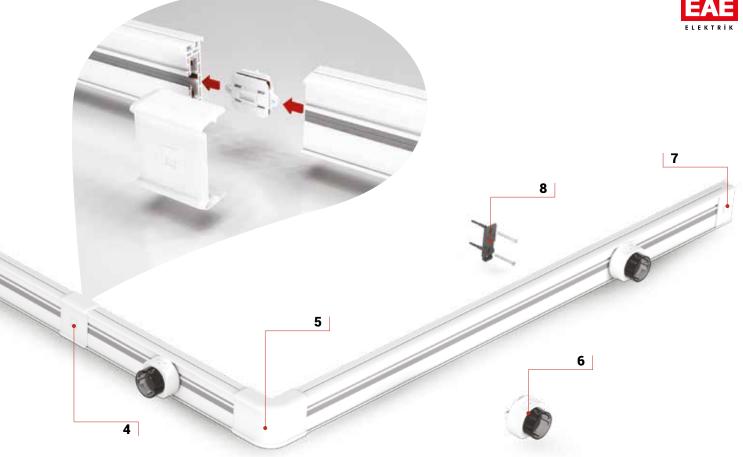
1

#### ►E-Line FL-I/FLD-I

	Rated Current	I,	Α	32
	Busbar Code			032
	Standard			IEC 61439-6
	Rated Insulation Voltage		V	415
	Rated Operating Voltage	U <sub>i</sub>	V	250
	Rated Frequency	U <sub>e</sub>	Hz	50
	Pollution Level	f		3
	Protection Class			2X
	External Mechanical Impacts (IK Code)	IP		07
	Rated Conditional Short Circuit Current		kA(rms)	(*)
S S	Resistance at a conductor temperature of 20 °C	I <sub>cc</sub>	mΩ/m	3,2878
UCT	Resistance at an ambient air temperature of 35 °C	R <sub>20</sub>	mΩ/m	3,8571
OND	Reactance (Temperature Independent)	R <sub>35</sub>	mΩ/m	0,2107
SE C	Positive and negative sequence impedances at an ambient air temperature of 35 °C	$X_{ph}$	mΩ/m	3,863
PHASE CONDUCTOR CHARACTERISTICS	Positive and negative sequence impedances at conductor temperature of 20 $^\circ C$	Z <sub>35</sub>	mΩ/m	3,2946
	Rated power loss at a temperature of 35 °C	Z <sub>20</sub>	P(W/m)	3,8
SS	Phase, neutral conductor cross-sections: 0,8mm x 7,5mm	Watt	mm²	6
CROSS	Ground conductor cross-sections: 0,8mm x 7,5mm		mm²	6

(\*) Short circuit current (kA) is determined according to the selected fuse type.





Note: Add 3 "FL Busbar Bracket Set" per 2m FL busbar length and 2 per 1m FL Busbar length.

#### **SAFETY**

- **E-LINE FL BUSBAR** is produced in accordance with ISO 9001 standards with a certified quality management system using the world's latest manufacturing technologies. Units are designed and tested according to IEC 61439-6, IEC 61534-1 and IEC 60884-1.
- The phase conductor structure is protected against finger contact and dust using a screen system along the length of the busbar. In cases where the socket is live the socket is secured into position using a special locking system. Sockets do not come off thanks to the clamping structure.



STEP 1 Mount socket in the line

**STEP 2** Turn the socket 90°

STEP 3 The socket is ready for use

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**Caution:** "ON" position must be aligned to the top edge of FL Busbar.



#### **FL BUSBAR COLOURS**

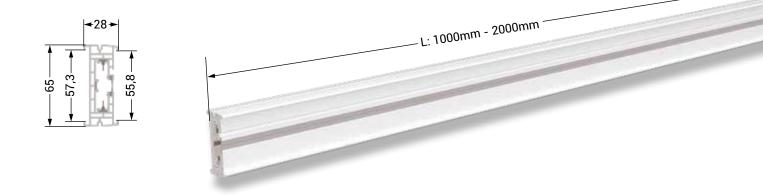
FL busbar is white-colored. For all non-standard colored busbars, please contact with us.

### MAIN COLOUR



#### FL-I Busbar

Product Description	Order Code
FL-I Busbar, 32A, 250V, L/N/PE (1m), PVC	3133630
<b>FL-I Busbar</b> , 32A, 250V, L/N/PE <b>(2m)</b> , PVC	3133629





#### **FL BUSBAR PRODUCT ORDER CODES**

#### FL-I Power Socket

Product Description	Order Code Without Fuse	Order Code With Fuse
FL-I Mains Socket, (German Std. Grounded Socket ), 16A, 250V	3182885	3182886
FL-I UPS Socket, (French Std.Grounded Socket), 16A, 250V	3182887	3182888
FL-I Power Socket, Type-1, (Italian Std. Grounded Socket), 10A/16A, 250V	3182889	3182890
FL-I Power Socket, Type-2,(Italian Std. Grounded Socket),10A/16A, 250V	3182891	3182892





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German Standard Grounded Socket (Mains)

16A, 250V, 2P+E

French Standard Grounded Socket (UPS)

16A, 250V, 2P+E



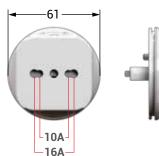


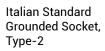




Italian Standard Grounded Socket, Type-1

10A/16A, 250V, 2P+E





10A/16A, 250V, 2P+E





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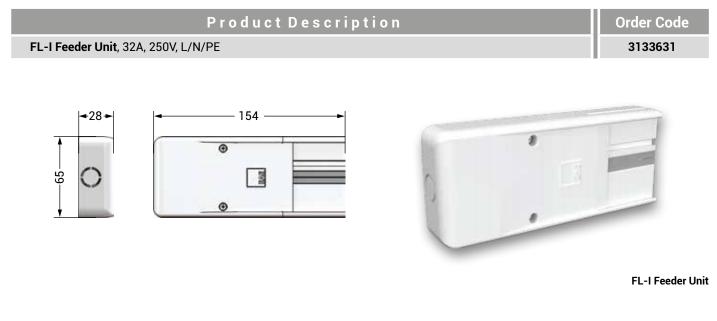
Body has a white colour, and the transparent upper frame has a smoked colour.All sockets are child protected.





#### **FL BUSBAR PRODUCT ORDER CODES**

#### ►FL-I Feeder Unit



#### ►FL-I End Cap

Product Description	Order Code
FL-I End Cap, 32A, 250V, L/N/PE	3048965





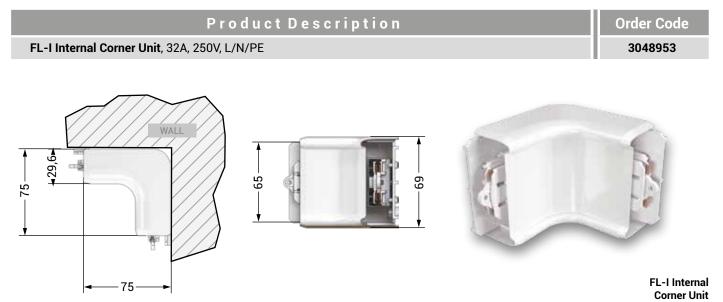
#### **FL BUSBAR PRODUCT ORDER CODES**

#### ►FL-I External Corner Unit



L-I External Corner Unit

#### ►FL-I Internal Corner Unit

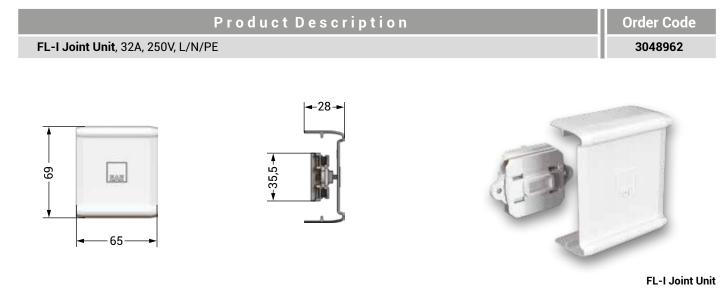






#### **FL BUSBAR PRODUCT ORDER CODES**

#### ►FL-I Joint Unit



#### ►FL Mounting Bracket Set

Product Description	Order Code
FL Mounting Bracket Set	3048968
	-



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FL Mounting Bracket Set



#### **FL BUSBAR AREA OF USAGE**



Laboratories



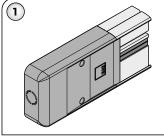
### Workshops



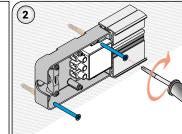


#### **FL BUSBAR MOUNTING**

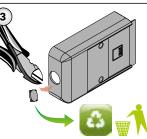
#### ▶ FL-I Busbar Feeder Unit Mounting



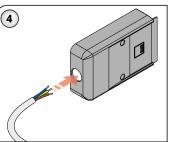
1-Supply a busbar feeder unit with cover.



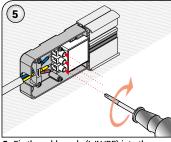
2-Remove the cover of the feeder unit and mount the unit on the wall with 2 M6 dowels and screws.



**3**-Cut the cable hole cover on the cover and remove.



**4-** Strip the end of the cable and insert through the hole.



6

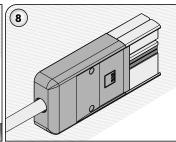
6- Place the feeder unit cover

2)

ensuring that the cover is correctly

aligned with the end of the busbar.

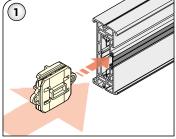
**7-** Secure the cover by tightening 2 screws on the cover.



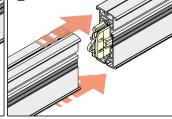
8- Finally check that the cable is not loose and that the cover is fully slotted.

**5-** Fix the cable ends (L/N/PE) into the corresponding terminals and tighten the cable clamp.

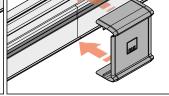
#### FL-I Busbar Joint Set Mounting



1-Place connector piece between FL busbar conductors and ensure a secure fit.

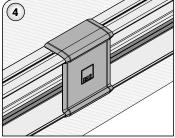


2- IIn the same way, place connector piece between other FL busbar conductors and ensure a secure fit.



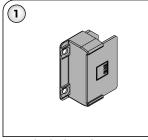
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**3-** Place the joint cover centering the joint point.

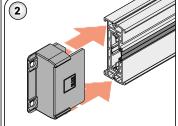


### **4**- Check that the joint cover is secure and finish the mounting.

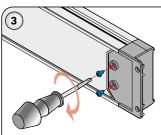
#### ▶FL-I Busbar End Cap Mounting



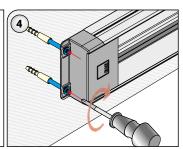
1- Supply a busbar end cap.



**2-** Place the end cap at the end of the busbar by pushing it into the busbar body.



**3-** Secure the end cap by tightening 2 screws as seen in figure.

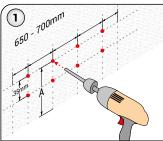


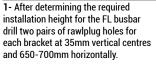
4- Complete the mounting of the end cap using screws as shown above.



#### **FL BUSBAR MOUNTING**

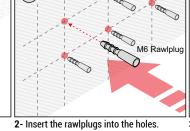
#### Bracket Set and FL Busbar Mounting







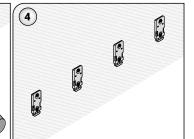
**5** - Place the FL Busbar close to the wall brackets.



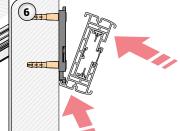
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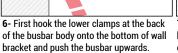
3)

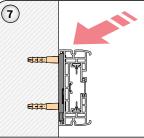
**3-** Fix the wall brackets with screws as shown above.



4- Ensure that all of the wall brackets are correctly aligned.



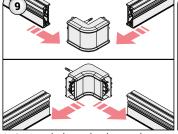




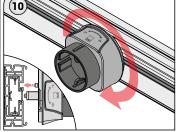
7- Then hook the upper clamps at the back of the busbar body onto the top of the wall bracket.

8

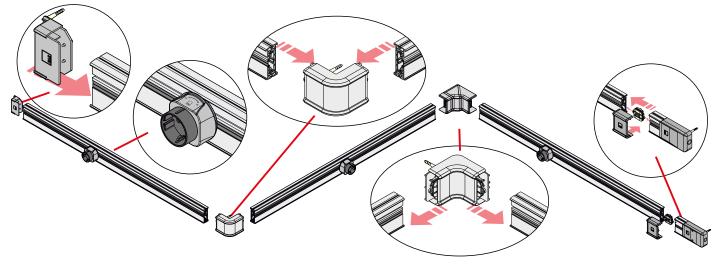
8- To complete the mounting of the FL Busbar check that the clamps are secure. And finish mounting.



9- Connect the internal and external corners using the same method used in fitting the joint connector piece and fix to the wall using the rawlplugs and screws.



**10-** Insert the FL socket into the trunking and secure it by turning in the specified direction. Caution: The "ON" position must be aligned to the top edge of the FL Busbar. **ATTENTION:** FL Busbar can be cut to length during installation. A fixed saw is recommended for this.





EAE

Aesthetic, safe, practical and flexible structure eliminating cable mess. E-LINE FLD Indoor Busbar Trunking Systems;

FLD Data Busbar System;

- Offices
- Workshops
- Stores
- Grocery stores
- Hospitals
- Laboratories
- Airports
- Business Centers

Wherever power is needed without the need for additional cabling, eliminates trailing cables and fixed sockets for low power distribution.

#### Eliminates mounting cables and sockets for indoor energy distribution.

#### E-LINE FLD Indoor Busbar Trunking Systems can be easily mounted on any surface using brackets.

Also, when its compact structure is used with joint, corner unit and cable section, it offers a **perfect structural** cabling infrastructure for data and phone requirements.

Modular standard data, telephone and TV sockets and special power and UPS sockets can be installed easily.

Power and UPS sockets with aesthetic design and different color options can be installed wihtout any hand tools to desired point.





#### GENERAL SPECIFICATIONS

▶Mains or UPS; 16A, 250V (child protected)
▶FLD Data Busbar; 32A, 250V Operating voltage

▶IP2X Protection Class

- ▶Using different socket structure for mains and UPS sockets.
- ▶ Single phase circuit (3 conductors); L+N+(PE) (65x28 mm), FL-I busbar application (standard)
- Separate and compact section for structural cabling (Data&Phone)
- Data, Phone, TV etc. socket mounting (without base)
- ►Aesthetic, safe, practical and flexible structure
- Easy and fast mounting
- Standard length is 1m and 2m.
- Standard color is white (RAL 9003), for different color options, please contact with us.





#### **FLD DATA BUSBAR DESIGN and PRODUCT SELECTION**

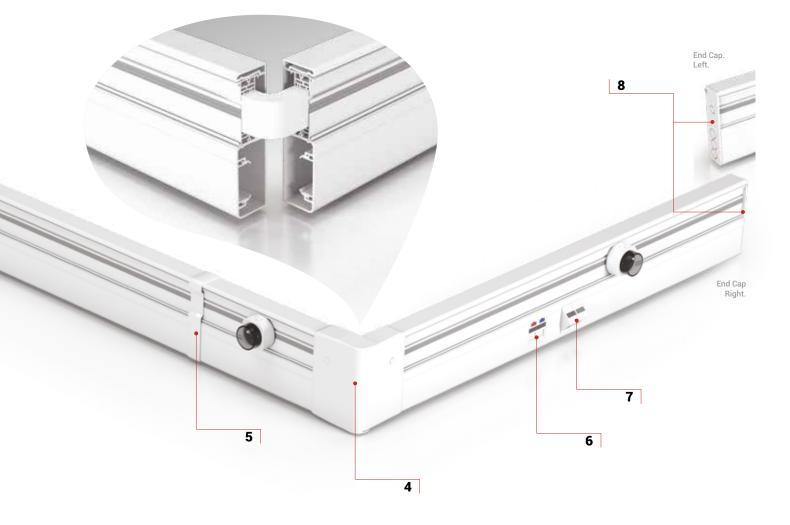
For design and product selection, select the numbered products and accessories shown below according to the layout of the building as shown in the project example.



- 1- FLD Data Busbar, Feeder Unit (32A, 250V, L/N/PE, 150x40mm)
- FLD Data Busbar, End Feeder Unit (32A, 250V, L/N/PE, 150x40mm)
- 2- FLD Data Busbar (32A, 250V, L/N/PE, 150x40x1000/2000mm)
- 3- FLD Data Busbar, Internal Corner Unit (32A, 250V, L/N/PE, 150x40mm)
- 4- FLD Data Busbar, External Corner Unit (32A, 250V, L/N/PE, 150x40mm)
- 5- FLD Data Busbar, Joint Unit(150x40mm)
- 6- FLD Data Busbar Keystone Faceplate, Straight Type (22,5x45mm)
- 7- FLD Data Busbar Keystone Faceplate, Angular Type (22,5x45mm)
- 8- FLD Data Busbar End Cap Right/Left (150x40mm)

Note: FLD Data Busbar has a compact structure which consists of a cable section for data and telephone connections and FL-I busbar.





#### **FLD BUSBAR COLOURS**

FLD busbar is white-colored. For all non-standard colored busbars, please contact with us.



Note: See the section for FL-I Sockets for socket options and ordering.



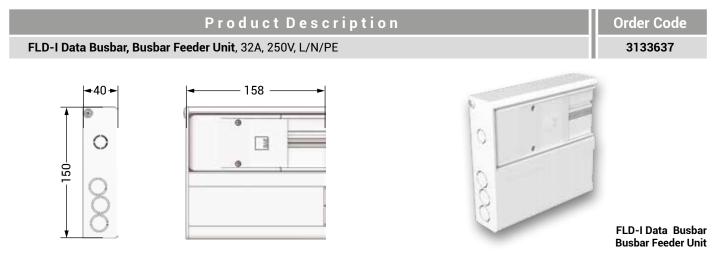


### **>>**FLD DATA BUSBAR PRODUCT ORDER CODES

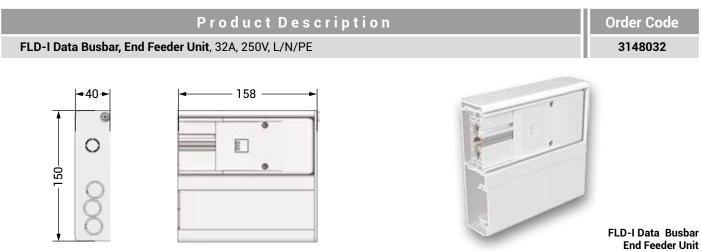
#### ▶FLD-I Data Busbar

Product Description	Order Code
FLD-I Data Busbar, 32A, 250V, L/N/PE (1m), PVC	3134084
FLD-I Data Busbar, 32A, 250V, L/N/PE (2m), PVC	3133634
L: 100mm - 200mm	FLD-I Data Busbar

#### FLD-I Data Busbar Busbar Feeder Unit



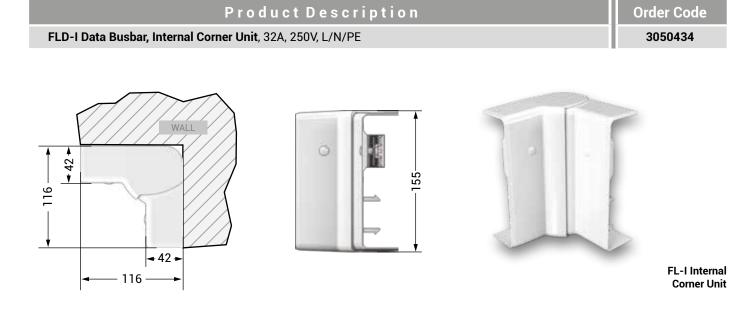
#### FLD-I Data Busbar End Feeder Unit





#### **FLD DATA BUSBAR PRODUCT ORDER CODES**

#### ►FLD-I Data Internal Corner Unit



#### ▶FLD-I Data Busbar External Corner Unit

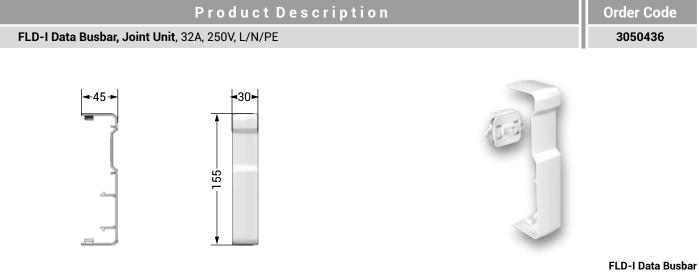
Product Description	Order Code
FLD-I Data Busbar, External Corner Unit, 32A, 250V, L/N/PE	3050435
	FL-I External Corner Unit





#### **FLD DATA BUSBAR PRODUCT ORDER CODES**

#### ▶FLD-I Data Busbar Joint Unit



FLD-I Data Busbar Joint Unit

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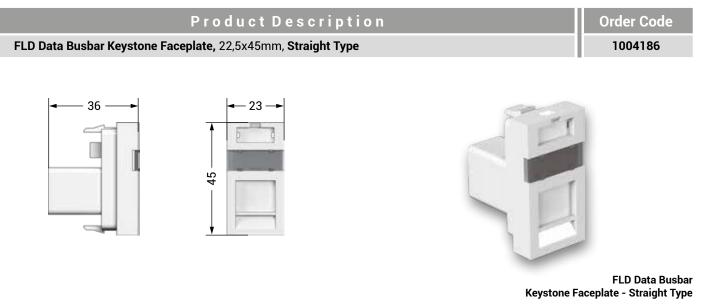
#### ▶FLD-I Data Busbar End Cap - Right

	Product Description	Order Code
FLD-I Data Busbar, End Cap	o - Right	3050437
<30►	-40 → 0g	FLD-1 Data Busbar, End Cap - Right
▶FLD-I Data Busbar End C	ap - Left	nigiit
	Product Description	Order Code
FLD-I Data Busbar End Cap	- Left	3050418
-30-		FLD-1 Data Busbar End Cap

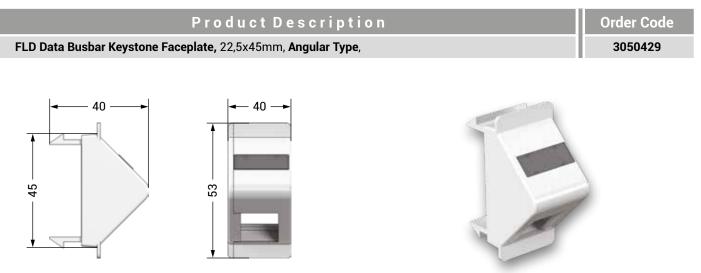


#### **FLD DATA BUSBAR PRODUCT ORDER CODES**

#### ▶ FLD Data Busbar Keystone Faceplate, Straight Type



FLD Data Busbar Keystone Faceplate, Angular Type



FLD Data Busbar Keystone Faceplate, Angular Type



### **FL / FLD BUSBAR AREA OF USAGE**

Airports and general places









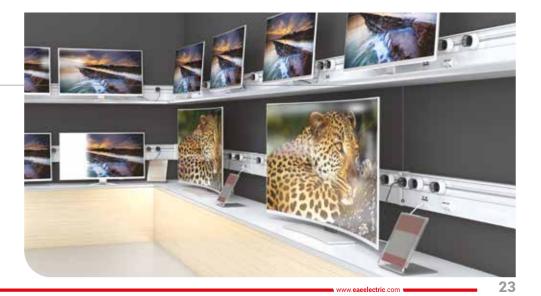
### **FL / FLD BUSBAR AREA OF USAGE**

Business centers, banks



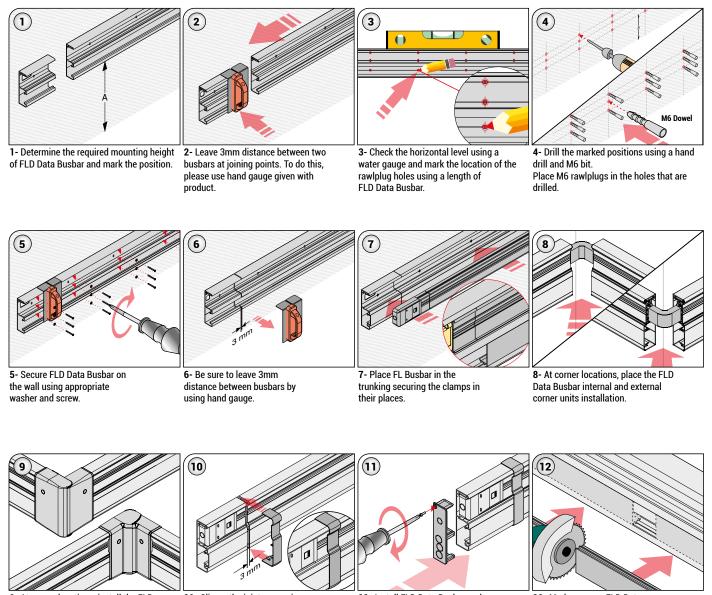


Technology stores





#### FLD DATA BUSBAR MOUNTING



9- At corner locations, install the FLD Data Busbar internal and external corner unit covers securing the clamps in their places.

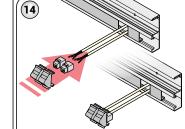
- 10- Clip on the joint cover piece central to the joint.
- 11- Install FLD Data Busbar end cap termination units securing them in the clamps.



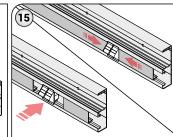
neatly cut the cover.

(16)

13- Extend Data and Phone cables through these cut sections approximately 50cm.



14- Have a qualified technician drive the cables to RJ45 data sockets and place the RJ45 data sockets with the cables driven on FLD Data Busbar Data & Phone socket base.



15- Place FLD Data Busbar Data&Phone Socket Base on the trunking. Push FLD Data Busbar cover and tighten socket base. complete and finish mounting.

16- Make sure FLD Data Busbar and all its accessories are

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ATTENTION: FLD busbar and cover can be cut during installation. To do this, it is recommended to start from corner mounting points and use of motorized circular saw for less casualties and easy installation.



#### GENERAL PRODUCT SPECIFICATION

#### FL BUSBAR and FLD DATA BUSBAR (32A) SYSTEM GENERAL PRODUCT SPECIFICATIONS

FL ve FLD Busbar;

1- Are manufactured according to IEC 61439-1,6 and IEC 61534-1 standards and sockets to be used in this system are manufactured according to IEC 60884-1 standard. Products have "type test" certificate from international test laboratories for 32A current level.

2- Indoor busbar trunking system and sockets to be used in this system are manufactured in facilities with ISO 9001 quality management system and ISO 14001 environment management system.

3- Nominal insulation voltage is 415 V.

4- Conductors are manufactured from tin plated electrolytic copper and tin with 32A current carrying capacity.

5- They are manufactured with 3 conductors, phase, neutral and earth (L/N/PE) structure.

6- They are manufactured in 1m and 2m standard lengths.

7- They are mounted on the wall with spring type special mounting brackets and they can also be installed in click-fit style in a special PVC data trunking offering structural cabling (data and phone) ability suitable for physical structure and dimensions when requested.

8- Supply connectors, internal and external corner units used in Busbar trunking and data trunking are manufactured with same specifications and in the same compact structure.

9- Connector member has tulip contact, click-fit structure connecting conductors on both sides. Contacts are silver coated and joints are covered with a separate plate in compact structure.

10- Special power sockets of Busbar trunking system (Mains and/or UPS) are 32 A and 250 V and they can be mounted or dismounted to any place on the indoor busbar trunking system. Thanks to its special lock mechanism and clamping structure, the cable is protected from coming off when it is plugged and they are manufactured in different colors.

11- Protection class is IP 2XB at least and it is protected against finger contact. There is a dust protector on the entire power reception trunking on the system and a special curtain with a rigid structure. This curtain has a flexible structure and it has resistance to -40/+80 °C operation temperature and pressure. The section it is placed on the profile is hard and the other end is soft.

12- Busbar and data trunking are manufactured in different colors with RAL codes suitable for the environment when requested.

13- Busbar and data trunking are manufactured from PVC material in accordance with ROSH and REACH standards.

14- Busbar trunking cross section has two internal walls and there are tie pieces between inner and outer walls.

15- There are no manufacturing defects such as foreign objects, gaps, pores, cracks, continuous scratches in Busbar trunking profile.

- 16- It has flame retardant characteristics and manufactured in UL94 standard and V2 class at minimum.
- 17- It is manufactured with resistance to -5/+40 °C ambient temperature.

18- It is subjected to "Hot wire test" and can resist 960 °C heat according to the test results.

19- It is subjected to "Impact test" and it is in IK 07 class.

20- Lengthwise change of busbar trunking profiles that are subjected to 100°C for 1 hour is calculated and tested. According to test results, deflection is no more than 2%.

21 - Busbar trunking profiles are subjected to 120 °C for 30 minutes. Their surfaces are checked after they cooled down in room temperature and no grains, peeling or surface defects were not observed.

22- Busbar trunking profile hardness is 77 (± 2) Shore D.

23- Lengthwise deflection on Busbar trunking profile is 1 mm/m maximum.

- 24- They are manufactured in accordance with "weight loading test" conditions stated in IEC 61439-1.
- 25- They are manufactured in accordance with "weight loading test" conditions stated in IEC 61439-1.
- 26- It is covered in protective film to prevent contamination before field mounting.
- 27- They are manufactured from unleaded raw material.



# **CE DECLARATION OF CONFORMITY**

**Product Group** 

E-LINE FL/FLD Indoor Busbar Trunking Systems

Manufacturer

EAE Elektrik Asansör End. İnşaat San. ve Tic. A.Ş. Akçaburgaz Mahallesi, 3114. Sokak, No:10, 34522 Esenyurt - İstanbul

We confirm that products or product group mentioned above manufactured in EAE Facilities conform to standards and regulations listed below.

#### Standard:

#### IEC 61439-6 / IEC 61534-1 / IEC 60884-1

Low voltage switching and control gear equipment - Part 6: Equipment for power distribution in general mains.

#### **CE - Directive:**

2006/95/AT "Regulation on electrical equipment" to be used in certain voltage limits"

#### **Technical Document Preparation Official:**

EAE Elektrik Asansor End. Insaat San. ve Tic. A.S. Akcaburgaz Mahallesi, 3114. Sokak, No:10 34522 Esenyurt-Istanbul

Emre GÜRLEYEN

Date

08.03.2021

**Document Authorized Signatory** 

Elif Gamze KAYA OK Deputy General Manager

#### **CERTIFICATE**

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тгот	
1E21	CERTIFICATE
Issued to:	EAE Elektrik Asansör End Insaat San, ve Tic. A.S.
	Akçaburgaz Mahallesi 119, Sokak No: 10 34510 Esenyurt / Istanbul
	Turkey
For the product:	Low-voltage busbar trunking system
Trade name:	EAE
Type/Model:	FL-I 32-3, FLD-I 32-3
Ratings:	Inc 32 A, Ui 415 V, Uimp 4 kV For more details see annex
Manufactured by:	EAE Elektrik Asansör End.
	Insaat San, ve Tic. A.S. Akçaburgaz Mahallesi 119, Sokak No: 10
	34510 Esenyurt / Istanbul
	Turkey
Subject:	Design verification
Requirements:	IEC 61439-6: 2012 Clauses: 10.2, 10.3, 10.4, 10.9, 10.10 and Annex BB and DD
Remarks	Busbar trunking system consists of feeder box, joint and straight lengths
This Test Cortificate	e is granted on account of an examination by DEKRA, the results of which are laid do
in report no. 219011	19.01-INC, dated 24/February 2016.
The examination ha	as been carried out on one single specimen of the product, submitted by the
manufacturer. The A	Attestation does not include an assessment of the manufacturer's production. oduction with the specimen tested by DEKRA is not the responsibility of DEKRA.
Conformity of his pro	
Conformity of his pro Arnhem, 24 Februar	

DEKRA Certification B V

F.S. Strikwerda Certification Manager

© Integral publication of this certificate and adjoining reports is allowed

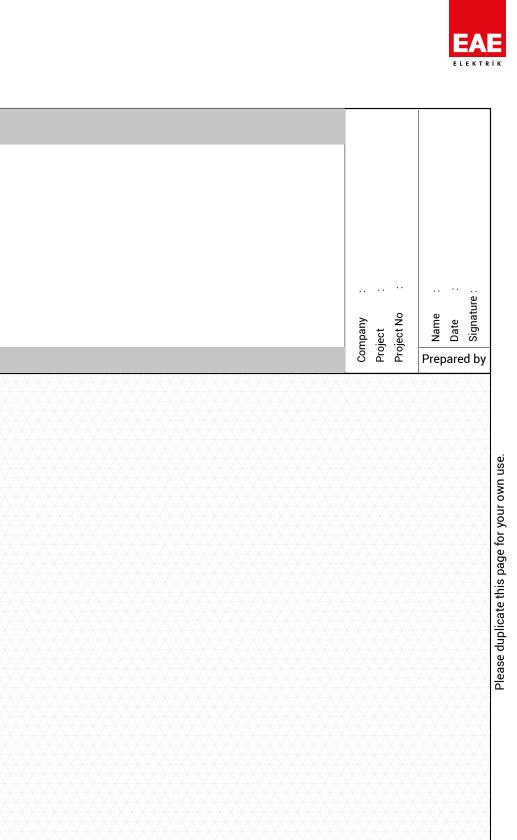
DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem, The Netherlands T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Company registration 09085396

#### DESIGN FORM

Pcs.

Serial No

Member List Type



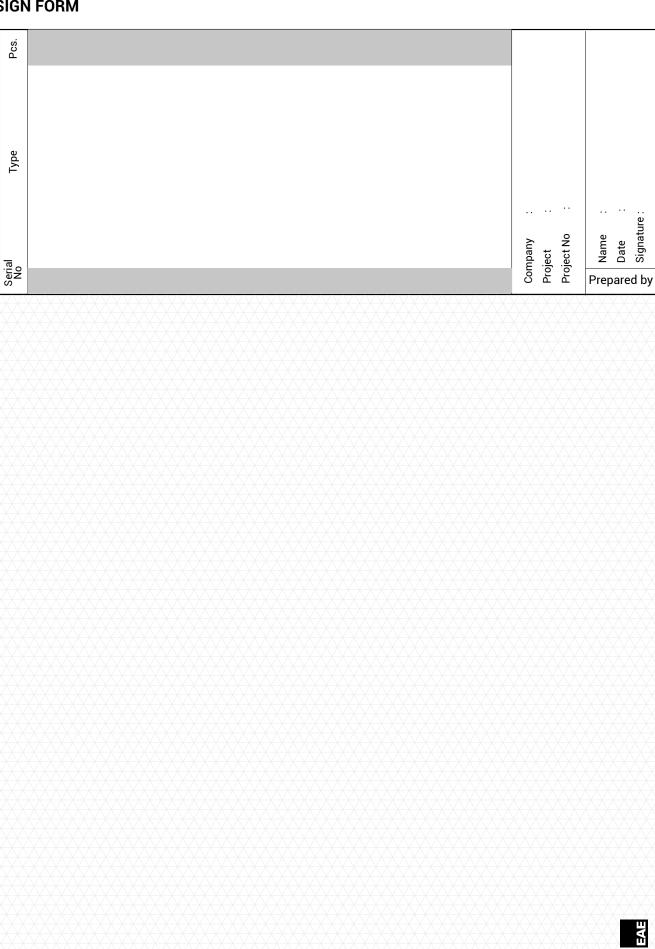
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#### **DESIGN FORM**

**Member List** 



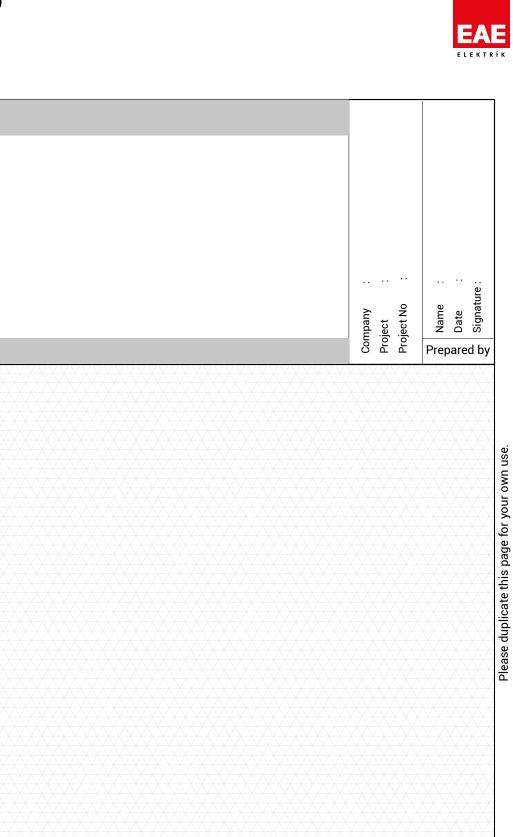


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Serial No

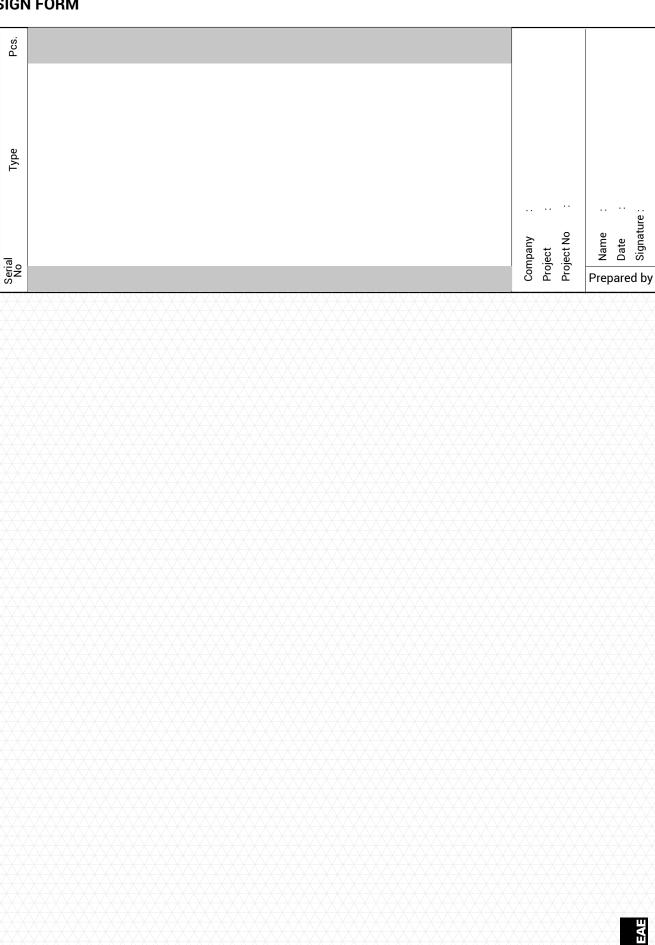
Member List Type



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#### **DESIGN FORM**

**Member List** 



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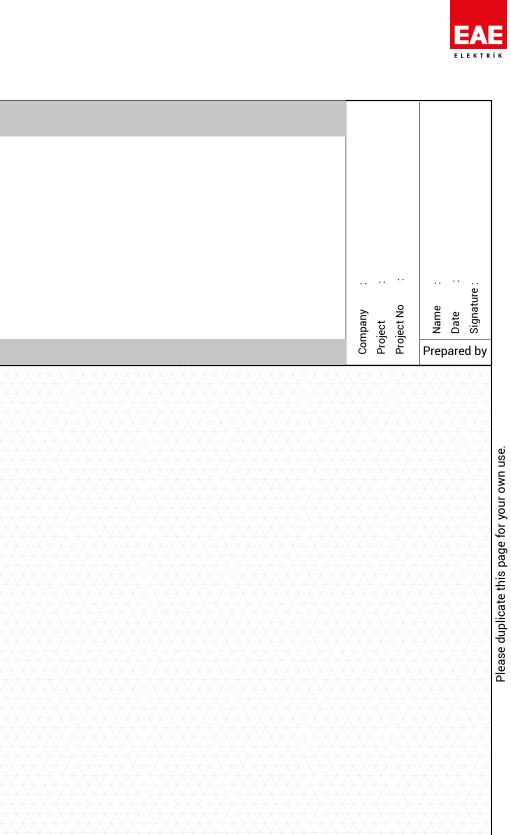


#### **DESIGN FORM**

Pcs.

Serial No

Member List Type



EME

# **PRODUCT TYPES**

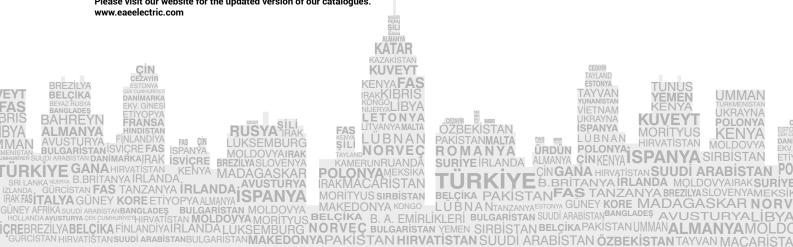
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